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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Magnus Karlsson

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TEXAS INSTRUMENTS INCORPORATED

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EXAMINER

HO, CHUONG T

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/827,816

Applicant(s)

KARLSSON ET AL.

Examiner

CHUONG T. HO

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Art Unit: 2664

1. The amendment filed 12/15/05 have been entered and made of record.
2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.
3. Claims 1-20 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 6, 8-9, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (U.S. Patent No. 6,747,977 B1) in view of Caves et al. (U.S. 6,788,691 B1).

Regarding to claim 1, see figure 1, Smith et al. discloses ATM Adaptation Layer (AAL-2) is distinct from other ATM adaptation layers since it de-couples voice packets from ATM cell boundaries, and also since mini-packets from several calls can be multiplexed into a single ATM connection. This multiplexed is asynchronous to the cell boundary and further effectively introduces a new switching layer above the ATM layer (see col. 3, lines 42-47); comprising:

- A first memory access unit (buffer 17), see figure 1, configured to fetch a voice packet from DSP sub-system (CODEC 14) system for transmitting packetised data received from a digital signal processor (DSP sub-system (Processor 21), wherein said voice packet includes a physical phone line identifier (truncated

header) (see col. 5, lines 56-62, the processor further comprising: means to packetise information from the narrowband domain into a slot selectively allocated to a call for transmission to a slot selectively allocated to a call for transmission to an address unit, the packetized information containing a truncated header of reduced length arising from the slot allocated to the call inherently identifying the packet length thereof and the channel);

- A second direct memory access unit (channel buffer 25), see figure 1, configured to fetch for receiving a packet fetched from host processor (signal processor 19, figure 1) (see col. 6, lines 13-27, receiving the intermediate packet to be received at the broadband signal processor should be temporary stored or converted into a broadband packet for onward transmission; and generating a broadband packet including a header containing a length indication if the at least one intermediate packet is to be converted into a broadband packet for substantially instantaneous onward transmission, else temporary storing the at least one intermediate packet and incrementing a record of a number intermediate packets temporary stored in relation to said channel).

However, Smith et al. is silent to disclosing a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier.

Caves et al., see figures 6, 4, discloses a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier (see col. 9, lines 48-55, col. 15, lines 23-25).

Both Smith and Caves discloses ATM adaptation layer type 2. Caves recognizes a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier. Thus, it would have been obvious to one skill in the art at the time of the invention to modify the system of Smith with the teaching of Caves to provide a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier in order to interleave the voice, and signaling and management into the AAL2 data stream.

5. In the claim 8, see figure 1, Smith et al. discloses ATM Adaptation Layer (AAL-2) is distinct from other ATM adaptation layers since it de-couples voice packets from ATM cell boundaries, and also since mini-packets from several calls can be multiplexed into a single ATM connection. This multiplexed is asynchronous to the cell boundary and further effectively introduces a new switching layer above the ATM layer (see col. 3, lines 42-47); comprising:

- A digital signal processor (CODEC 14) system having an input for receiving a voice communication and operably configured to packetize said voice communication and append a corresponding physical phone line identifier (truncated header) (see col. 5, lines 56-62, the processor further comprising: means to packetise information from the narrowband domain into a slot selectively allocated to a call for transmission to a slot selectively allocated to a call for transmission to an address unit, the packetized information containing a

Art Unit: 2664

truncated header of reduced length arising from the slot allocated to the call inherently identifying the packet length thereof and the channel);

- A host processor (signal processor 19) operably configured to enable ATM adaptation layer signaling and management and transmit a corresponding packet (signal processor 19, figure 1) (see col. 6, lines 13-27, receiving the intermediate packet to be received at the broadband signal processor should be temporary stored or converted into a broadband packet for onward transmission; and generating a broadband packet including a header containing a length indication if the at least one intermediate packet is to be converted into a broadband packet for substantially instantaneous onward transmission, else temporary storing the at least one intermediate packet and incrementing a record of a number intermediate packets temporary stored in relation to said channel);
- An ATM processor (packet interface 20) comprising:
- A first memory access unit (buffer 17), see figure 1, configured to fetch a voice packet from DSP sub-system (CODEC 14) system for transmitting packetised data received from a digital signal processor (DSP sub-system (Processor 21), wherein said voice packet includes a physical phone line identifier (truncated header) (see col. 5, lines 56-62, the processor further comprising: means to packetise information from the narrowband domain into a slot selectively allocated to a call for transmission to a slot selectively allocated to a call for transmission to an address unit, the packetized information containing a

truncated header of reduced length arising from the slot allocated to the call inherently identifying the packet length thereof and the channel);

- A second direct memory access unit (channel buffer 25), see figure 1, configured to fetch for receiving a packet fetched from host processor (signal processor 19, figure 1) (see col. 6, lines 13-27, receiving the intermediate packet to be received at the broadband signal processor should be temporary stored or converted into a broadband packet for onward transmission; and generating a broadband packet including a header containing a length indication if the at least one intermediate packet is to be converted into a broadband packet for substantially instantaneous onward transmission, else temporary storing the at least one intermediate packet and incrementing a record of a number intermediate packets temporary stored in relation to said channel).

However, Smith et al. is silent to disclosing a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier.

Caves et al. , see figures 6, 4, discloses a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier (see col. 9, lines 48-55, col. 15, lines 23-25).

Both Smith and Caves discloses ATM adaptation layer type 2. Caves recognizes a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier. Thus, it would have been obvious to one skill in the art at the time of the invention to modify the system of Smith

Art Unit: 2664

with the teaching of Caves to provide a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier in order to interleave the voice, and signaling and management into the AAL2 data stream.

6. In the claims 9, 2, Smith et al. discloses the limitations of claim 1 above.

However, Smith et al. is silent to discloses ATM system is an AAL2 module.

Caves et al. discloses ATM transmitter is implemented in an AAL2 module (600) (see figure 6).

Both Smith and Caves discloses ATM adaptation layer type 2. Caves recognizes ATM transmitter is implemented in an AAL2 module. Thus, it would have been obvious to one skill in the art at the time of the invention to modify the system of Smith with the teaching of Caves to provide ATM transmitter is implemented in an AAL2 module in order to interleave the voice, and signaling and management into the AAL2 data stream.

7. In the claim 16, see figure 1, Smith et al. discloses ATM Adaptation Layer (AAL-2) is distinct from other ATM adaptation layers since it de-couples voice packets from ATM cell boundaries, and also since mini-packets from several calls can be multiplexed into a single ATM connection. This multiplexed is asynchronous to the cell boundary and further effectively introduces a new switching layer above the ATM layer (see col. 3, lines 42-47); comprising:

- Fetching a voice packet from said DSP sub-system (CODEC 14), said voice packet including a physical phone line identifier (truncated header) corresponding to an originating voice channel supported by DSP sub-system (see col. 5, lines

56-62, the processor further comprising: means to packetise information from the narrowband domain into a slot selectively allocated to a call for transmission to a slot selectively allocated to a call for transmission to an address unit, the packetized information containing a truncated header of reduced length arising from the slot allocated to the call inherently identifying the packet length thereof and the channel); forwarding voice packet to a transmit buffer associated with a identified transmit channel (see col. 5, lines 56-62);

- Fetching a packet from host processor (signal processor 19).

However, Smith et al. is silent to disclosing a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier.

Caves et al. , see figures 6, 4, discloses a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier (see col. 9, lines 48-55, col. 15, lines 23-25).

Both Smith and Caves discloses ATM adaptation layer type 2. Caves recognizes a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier. Thus, it would have been obvious to one skill in the art at the time of the invention to modify the system of Smith with the teaching of Caves to provide a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier in order to interleave the voice, and signaling and management into the AAL2 data stream.

Art Unit: 2664

8. In the claim 6, Smith discloses first direct memory access unit (buffer 17) further operably configured to fetch voice packet from a voice buffer associated with each digital signal processor in DSP sub-system (CODEC 14) (see figure 1, (see col. 5, lines 56-62, the processor further comprising: means to packetise information from the narrowband domain into a slot selectively allocated to a call fro transmission to a slot selectively allocated to a call for transmission to an address unit, the packetized information containing a truncated header of reduced length arising from the slot allocated to the call inherently identifying the packet length thereof and the channel).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3-5, 7, 10-15, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Smith – Caves) in view of Rostoker et al. (U.S. Patent No. 5,640,399).

In the claims 3, 10,17, the combined system (Smith – Caves) discloses the limitations of claim 1 above.

However, the combined system (Smith – Caves) is silent to disclosing a router identifier table having a memory for storing channel pointers, wherein physical line

Art Unit: 2664

identifier indexes to a particular channel pointer which identifies a transmit channel in a channel state table; and wherein channel state table having a memory for storing channel information for a plurality of transmit channels, channel information including a pointer to a transmit buffer, wherein voice and signaling and management packets identified to a particular transmit buffer are forward to particular transmit buffer for further processing and transmission to a destination port.

Rostoker et al. discloses a router identifier table having a memory for storing channel pointers, wherein physical line identifier indexes to a particular channel pointer which identifies a transmit channel in a channel state table; and wherein channel state table having a memory for storing channel information for a plurality of transmit channels, channel information including a pointer to a transmit buffer, wherein voice and signaling and management packets identified to a particular transmit buffer are forward to particular transmit buffer for further processing and transmission to a destination port (see figures 7, 6, 5B, col. 21, lines 50-55).

Both Smith, Caves, and Rostoker discloses AAL type to process. Rostoker recognizes a router identifier table having a memory for storing channel pointers, wherein physical line identifier indexes to a particular channel pointer which identifies a transmit channel in a channel state table. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Smith – Caves) with the teaching of Rostoker to provide a router identifier table having a memory for storing channel pointers, wherein physical line identifier indexes to a

Art Unit: 2664

particular channel pointer which identifies a transmit channel in a channel state table in order to multiplexing a plurality of physical phone line onto one ATM channel.

10. In the claims 4, 11, 12, the combined system (Smith – Caves) discloses the limitations of claim 3 above.

However, the combined system (Smith – Caves) is silent to disclosing a plurality of entries in router identifier table identifies a particular transmit channel for multiplexing a plurality of physical phone line (voice processing trunk) onto one ATM channel.

Rostoker discloses a plurality of entries in router identifier table identifies a particular transmit channel for multiplexing a plurality of physical phone line (voice processing trunk) onto one ATM channel (see figures 7, 6, 5B, col. 21, lines 50-55).

Both Smith, Caves, and Takechi discloses AAL type to process. Rostoker recognizes a plurality of entries in router identifier table identifies a particular transmit channel for multiplexing a plurality of physical phone line (voice processing trunk) onto one ATM channel. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Smith – Caves) with the teaching of Rostoker to provide a plurality of entries in router identifier table identifies a particular transmit channel for multiplexing a plurality of physical phone line (voice processing trunk) onto one ATM channel in order to multiplexing a plurality of physical phone line onto one ATM channel.

11. In the claims 5, 13, 18, 19, the combined system (Smith – Caves) discloses the limitations of claim 3 above.

However, the combined system (Smith – Caves) is silent to disclosing forwarding voice and signaling and management packet payload to particular transmit buffer.

Rostoker discloses forwarding voice and signaling and management packet payload to particular transmit buffer (see figures 7, 6, 5B, col. 21, lines 50-55).

Both Smith, Caves, and Rostoker discloses AAL type to process. Takechi recognizes forwarding voice and signaling and management packet payload to particular transmit buffer. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Smith – Caves) with the teaching of Rostoker to provide forwarding voice and signaling and management packet payload to particular transmit buffer in order to multiplexing a plurality of physical phone line onto one ATM channel.

12. In the claims 7, 14, 15, 20, the combined system (Smith – Caves) discloses the limitations of claim 3 above.

However, the combined system (Smith – Caves) is silent to disclosing the apparatus of Claim 3 implemented in hardware.

Rostoker discloses the apparatus of Claim 3 implemented in hardware (see figures 7, 6, 5B, col. 21, lines 50-55).

Both Smith, Caves, and Rostoker discloses AAL type to process. Takechi recognizes the apparatus of Claim 3 implemented in hardware. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Smith – Caves) with the teaching of Rostoker to provide the

Art Unit: 2664

apparatus of Claim 3 implemented in hardware in order to multiplexing a plurality of physical phone line onto one ATM channel.

Double Patenting

13. Claims 1, 16, 8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,961,340 B2 in view of Caves et al. (U.S. 6,788,691 B1).

14. In the claim 1, Claim 1 (6,961,340 B2) discloses an apparatus for transmitting packetized data received from a digital signal processor (DSP) sub-system and host processor in an asynchronous transfer mode (ATM) system (see claim 1, col. 17, lines 12-16); a first direct memory access unit configured to fetch a voice packet from DSP sub-system, wherein voice packet includes a physical phone identifier (a channel identification, CID); and a second direct memory access unit configured to fetch a packet from host processor (see col. 17, lines 22-27).

However, Claim 1 (6,961,340 B2) is silent to disclosing signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier.

Caves et al. , see figures 6, 4, discloses a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier (see col. 9, lines 48-55, col. 15, lines 23-25).

Both Claim 1 (6,961,340 B2) and Caves discloses ATM adaptation layer type 2. Caves recognizes a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier. Thus, it would

Art Unit: 2664

have been obvious to one skill in the art at the time of the invention to modify the system of Claim 1 (6,961,340 B2) with the teaching of Caves to provide a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier in order to interleave the voice, and signaling and management into the AAL2 data stream.

15. In the claim 16, Claim 1 (6,961,340 B2) discloses a method for transmitting packetized data received from a digital signal processor (DSP) sub-system and a host processor in an asynchronous transfer mode (ATM) system (see claim 1, col. 17, lines 12-16); fetching a voice packet from said DSP sub-system, said voice packet including a physical phone line identifier (a channel identification) corresponding to an originating voice channel supported by DSP sub-system; forwarding voice packet to a transmit buffer associated with a identified transmit channel; fetching a packet from host processor; (see col. 17, lines 22-27).

However, Claim 1 (6,961,340 B2) is silent to disclosing signaling and management packet from host processor, forwarding signaling and management packet to a transmit buffer associated with an identified transmit channel.

Caves et al. , see figures 6, 4, discloses a signaling and management packet from host processor, forwarding signaling and management packet to a transmit buffer associated with an identified transmit channel (see col. 9, lines 48-55, col. 15, lines 23-25).

Both Claim 1 (6,961,340 B2) and Caves discloses ATM adaptation layer type 2.

Caves recognizes a signaling and management packet from host processor, forwarding

Art Unit: 2664

signaling and management packet to a transmit buffer associated with an identified transmit channel. Thus, it would have been obvious to one skill in the art at the time of the invention to modify the system of Claim 1 (6,961,340 B2) with the teaching of Caves to provide a signaling and management packet from host processor, forwarding signaling and management packet to a transmit buffer associated with an identified transmit channel in order to interleave the voice, and signaling and management into the AAL2 data stream.

16. In the claim 8, Claim 1 (6,961,340 B2) discloses a digital signal processor (DSP) system having an input for receiving a voice communication and operably configured to packetized said voice communication and append a corresponding physical line identifier (a channel identification, CID); a host processor operably configured to enable ATM adaptation layer and transmit a packet including a transmit channel identifier and; and fetching a voice packet from said DSP sub-system, said voice packet including a physical phone line identifier (a channel identification) corresponding to an originating voice channel supported by DSP sub-system; forwarding voice packet to a transmit buffer associated with a identified transmit channel; fetching a packet from host processor; (see col. 17, lines 22-27).

However, Claim 1 (6,961,340 B2) is silent to disclosing signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier.

Caves et al. , see figures 6, 4, discloses a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier (see col. 9, lines 48-55, col. 15, lines 23-25).

Both Claim 1 (6,961,340 B2) and Caves discloses ATM adaptation layer type 2. Caves recognizes a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier. Thus, it would have been obvious to one skill in the art at the time of the invention to modify the system of Claim 1 (6,961,340 B2) with the teaching of Caves to provide a signaling and management packet from host processor, wherein signaling and management packet includes a transmit channel identifier in order to interleave the voice, and signaling and management into the AAL2 data stream.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T. HO whose telephone number is (571) 272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2664

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

02/27/06

A handwritten signature in black ink, appearing to read 'Huy D. Vu', followed by a long horizontal line extending to the right.

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600